



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/513,155	02/25/2000	Paramvir Bahl	200410	7877

7590 10/09/2003

Leydig Voit & Mayer Ltd.
Two Prudential Plaza
Suite 4900
180 North Stetson
Chicago, IL 60601-6780

EXAMINER

PERSINO, RAYMOND B

ART UNIT	PAPER NUMBER
2682	

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/513,155	BAHL ET AL.
	Examiner Raymond B. Persino	Art Unit 2682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-44 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-11, 14-20, 23-31 and 34-42 is/are rejected.
- 7) Claim(s) 12,13,21,22,32,33,43 and 44 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2 & 3</u> .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-11, 14-20, 23-31 and 34-42 are rejected under 35 U.S.C. 102(b) as being anticipated by SUGIURA et al (GB 2311697 A).

Regarding claim 1, SUGIURA et al discloses measuring a wireless signal strength; comparing the measured wireless signal strength to a table of wireless signal strengths and known locations of the mobile unit; finding a table entry whose wireless signal strength is closest, by distance in signal space, to the measured wireless signal strength; and, determining the location of the mobile unit with reference to the found table entry (page 71 line 1 to page 82 line 3).

Regarding claim 2, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that determining the location of the mobile unit with reference to the found table entry includes determining the location of the mobile unit to be proximate to a known location corresponding to the found table entry (page 71 line 1 to page 82 line 3).

Regarding claim 3, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the finding

the table entry whose wireless signal strength is most similar to the measured wireless signal strength includes finding a plurality of table entries and wherein the determining the location of the mobile unit with reference to the found table entry includes determining the location of the mobile unit to be proximate to a spatial average of known locations corresponding to the found plurality of table entries (page 71 line 1 to page 82 line 3).

Regarding claim 4, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the determining the location of the mobile unit to be proximate to a spatial average of known locations corresponding to the found plurality of table entries includes multiplying each known location by a weighting factor prior to the spatial averaging of the known locations (page 71 line 1 to page 82 line 3).

Regarding claim 5, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the measuring the wireless signal strength includes measuring, at the mobile unit, a wireless signal strength of a base station, and wherein the table of wireless signal strengths and known locations of the mobile unit includes the wireless signal strength of the base station (page 71 line 1 to page 82 line 3).

Regarding claim 6, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the table of wireless signal strengths and known locations of the mobile unit is generated by a method comprising the steps of measuring, at the mobile unit in a known location, the

wireless signal strength of the base station; and entering, as an entry in the table, the known location and the measured wireless signal strength of the base station (page 71 line 1 to page 82 line 3).

Regarding claim 7, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the measuring of the wireless signal strength of the base station includes measuring, at the mobile unit in the known location, the wireless signal strength of the base station in a plurality of orientations of the mobile unit (page 71 line 1 to page 82 line 3).

Regarding claim 8, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the table of wireless signal strengths and known locations of the mobile unit is generated by a method comprising the steps of mathematically estimating, at the mobile unit in a known location, the wireless signal strength of the base station; and entering, as an entry in the table, the known location and the mathematically estimated wireless signal strength of the base station (page 71 line 1 to page 82 line 3).

Regarding claim 9, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the mathematically estimating, at the mobile unit in the known location, the wireless signal strength of the base station includes determining a reference wireless signal strength of the base station at a reference distance from the base station (page 71 line 1 to page 82 line 3).

Regarding claim 10, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the mathematically estimating, at the mobile unit in the known location, the wireless signal strength of the base station includes determining a distance between the base station and the known location (page 71 line 1 to page 82 line 3).

Regarding claim 11, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the mathematically estimating, at the mobile unit in the known location, the wireless signal strength of the base station includes determining an existing number of walls between the base station and the known location and determining a wall attenuation factor (page 82 line 5 to page 90 line 4).

Regarding claim 14, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that measuring the wireless signal strength includes measuring, at a base station, a wireless signal strength of the mobile unit, and wherein the table of wireless signal strengths and known locations of the mobile unit includes the wireless signal strength of the mobile unit (page 63 line 12 to page 82 line 3).

Regarding claim 15, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the table of wireless signal strengths and known locations of the mobile unit is generated by a method comprising the steps of measuring, at the base station, the wireless signal strength of the mobile unit in a known location; and entering, as an entry in the table,

the known location and the measured wireless signal strength of the mobile unit in the known location (page 63 line 12 to page 82 line 3).

Regarding claim 16, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the measuring of the wireless signal strength of the mobile unit in the known location includes measuring, at the base station, the wireless signal strength of the mobile unit in a plurality of orientations at the known location (page 63 line 12 to page 82 line 3).

Regarding claim 17, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the table of wireless signal strengths and known locations of the mobile unit is generated by a method comprising the steps of mathematically estimating, at the base station, the wireless signal strength of the mobile unit in a known location; and entering, as an entry in the table, the known location and the mathematically estimated wireless signal strength of the mobile unit in the known location (page 63 line 12 to page 82 line 3).

Regarding claim 18, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the mathematically estimating, at the base station, the wireless signal strength of the mobile unit in the known location includes determining a reference wireless signal strength of the mobile unit in the known location at a reference distance from the mobile unit in the known location (page 63 line 12 to page 82 line 3).

Regarding claim 19, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the

mathematically estimating, at the base station, the wireless signal strength of the mobile unit in the known location includes determining a distance between the base station and the known location (page 63 line 12 to page 82 line 3).

Regarding claim 20, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the mathematically estimating, at the base station, the wireless signal strength of the mobile unit in the known location includes determining an existing number of walls between the base station and the known location and determining a wall attenuation factor (page 63 line 12 to page 70 line 23 and page 82 line 5 to page 90 line 4).

Regarding claim 23, SUGIURA et al discloses measuring a wireless signal strength; comparing the measured wireless signal strength to a table of wireless signal strengths and known locations of the mobile unit; finding a table entry whose wireless signal strength is closest, by distance in signal space, to the measured wireless signal strength; and, determining the location of the mobile unit with reference to the found table entry (page 71 line 1 to page 82 line 3).

Regarding claim 24, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that determining the location of the mobile unit with reference to the found table entry includes determining the location of the mobile unit to be proximate to a known location corresponding to the found table entry (page 71 line 1 to page 82 line 3).

Regarding claim 25, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the finding

the table entry whose wireless signal strength is most similar to the measured wireless signal strength includes finding a plurality of table entries and wherein the determining the location of the mobile unit with reference to the found table entry includes determining the location of the mobile unit to be proximate to a spatial average of known locations corresponding to the found plurality of table entries (page 71 line 1 to page 82 line 3).

Regarding claim 26, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the determining the location of the mobile unit to be proximate to a spatial average of known locations corresponding to the found plurality of table entries includes multiplying each known location by a weighting factor prior to the spatial averaging of the known locations (page 71 line 1 to page 82 line 3).

Regarding claim 27, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the measuring the wireless signal strength includes measuring, at the mobile unit, a wireless signal strength of a base station, and wherein the table of wireless signal strengths and known locations of the mobile unit includes the wireless signal strength of the base station (page 71 line 1 to page 82 line 3).

Regarding claim 28, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the table of wireless signal strengths and known locations of the mobile unit is generated by a method comprising the steps of measuring, at the mobile unit in a known location, the

wireless signal strength of the base station; and entering, as an entry in the table, the known location and the measured wireless signal strength of the base station (page 71 line 1 to page 82 line 3).

Regarding claim 29, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the measuring of the wireless signal strength of the base station includes measuring, at the mobile unit in the known location, the wireless signal strength of the base station in a plurality of orientations of the mobile unit (page 71 line 1 to page 82 line 3).

Regarding claim 30, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the table of wireless signal strengths and known locations of the mobile unit is generated by a method comprising the steps of mathematically estimating, at the mobile unit in a known location, the wireless signal strength of the base station; and entering, as an entry in the table, the known location and the mathematically estimated wireless signal strength of the base station (page 71 line 1 to page 82 line 3).

Regarding claim 31, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the mathematically estimating, at the mobile unit in the known location, the wireless signal strength of the base station includes determining a reference wireless signal strength of the base station at a reference distance from the base station (page 71 line 1 to page 82 line 3).

Regarding claim 32, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the mathematically estimating, at the mobile unit in the known location, the wireless signal strength of the base station includes determining a distance between the base station and the known location (page 71 line 1 to page 82 line 3).

Regarding claim 33, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the mathematically estimating, at the mobile unit in the known location, the wireless signal strength of the base station includes determining an existing number of walls between the base station and the known location and determining a wall attenuation factor (page 82 line 5 to page 90 line 4).

Regarding claim 36, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that measuring the wireless signal strength includes measuring, at a base station, a wireless signal strength of the mobile unit, and wherein the table of wireless signal strengths and known locations of the mobile unit includes the wireless signal strength of the mobile unit (page 63 line 12 to page 70 line 23).

Regarding claim 37, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the table of wireless signal strengths and known locations of the mobile unit is generated by a method comprising the steps of measuring, at the base station, the wireless signal strength of the mobile unit in a known location; and entering, as an entry in the table,

the known location and the measured wireless signal strength of the mobile unit in the known location (page 63 line 12 to page 82 line 3).

Regarding claim 38, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the measuring of the wireless signal strength of the mobile unit in the known location includes measuring, at the base station, the wireless signal strength of the mobile unit in a plurality of orientations at the known location (page 63 line 12 to page 82 line 3).

Regarding claim 39, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the table of wireless signal strengths and known locations of the mobile unit is generated by a method comprising the steps of mathematically estimating, at the base station, the wireless signal strength of the mobile unit in a known location; and entering, as an entry in the table, the known location and the mathematically estimated wireless signal strength of the mobile unit in the known location (page 63 line 12 to page 82 line 3).

Regarding claim 40, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the mathematically estimating, at the base station, the wireless signal strength of the mobile unit in the known location includes determining a reference wireless signal strength of the mobile unit in the known location at a reference distance from the mobile unit in the known location (page 63 line 12 to page 82 line 3).

Regarding claim 41, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the

mathematically estimating, at the base station, the wireless signal strength of the mobile unit in the known location includes determining a distance between the base station and the known location (page 63 line 12 to page 82 line 3).

Regarding claim 42, see the rejection of the parent claim concerning the subject matter this claim is dependant upon. SUGIURA et al further discloses that the mathematically estimating, at the base station, the wireless signal strength of the mobile unit in the known location includes determining an existing number of walls between the base station and the known location and determining a wall attenuation factor (page 63 line 12 to page 70 line 23 and page 82 line 5 to page 90 line 4).

Allowable Subject Matter

3. Claims 12, 13, 21, 22, 32, 33, 43 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 12, 21, 32 and 43, the applicant includes the subject matter of using a line clipping algorithm in the determining the existing number of walls between the base station and the known location. This limitation, when taken with the additional subject matter associated with the claim, comprises a unique combination of subject matter that is neither taught nor suggested by the prior art.

Regarding claims 13, 22, 33 and 44, the applicant includes the subject matter of determining a practical limit number of walls between the base station and the known location in the determining the existing number of walls between the base station and

the known location. This limitation, when taken with the additional subject matter associated with the claim, comprises a unique combination of subject matter that is neither taught nor suggested by the prior art.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Messier et al (US 6,246,861 B1) discloses a cellular telephone location system.

Sugiura et al (US 6,362,783 B1) discloses a wireless communication system and method and system for detection of position of radio mobile station.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond B. Persino whose telephone number is (703) 308-7528. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on (703) 308-6739. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

9/30/03

Raymond B. Persino 
Examiner
Art Unit 2682